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ABSTRACT

A study constructed a detailed description of students' perceptions of the transition to adulthood and the decision-making strategies used as they approached high school graduation. A Post-High School Plans Survey was administered to 186 seniors in Northern California; a subsample of 32 students was interviewed to assess identity, exploitation, and commitment. Three types of goal orientations (task, self, social) were analyzed in relation to four decision outcome categories (four-year college, junior college, noncollege, undecided) and the decision-making processes involved. The post-high school decision-making process was related to students' perceptions of this time as initiating the transition to adulthood in two significant ways. First, if students perceived that upon leaving high school they were entering new roles and requirements as young adults, they were more likely to initiate the thinking and goal-setting necessary to establish a path into adulthood. Second, students who perceived themselves as involved in adult development were more likely to have stronger goals and higher levels of thinking during the transition to adulthood. The most promising decision-making profile was associated with students' perceptions of adulthood as being initiated during high school years but continuing on into the mid-20s. Students with a sense of the "big picture" of adulthood were better able to evaluate alternatives as they left high school and to select a career that reflected their commitment to a particular identity. (YLB)

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Decision-making profiles of a group of high school seniors engaged in the transition to adulthood

by

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Introduction

Previous studies of adolescent decision making have linked problem solving and thinking skills (e.g., career and health-related decision making and interpersonal communication) with competence in social contexts (Jepsen, Dusting, & Miars, 1982; Loesch-Griffin, Flora, & Benjamin, 1986; Spivack, Platt, & Shure, 1976; Warner & Jepsen, 1979). In most of these studies, however, the researchers were not immediately concerned with the predictive validity of these skills with competence in adult life, nor did they attempt to capture the complexity of the decision-making process when set within the context of developmental issues and socio-cultural and contextual influences.

Decision making and problem solving are critical to students' active and successful participation in adult life and are conceived of as indicators of adult intelligence (Sternberg, 1981). Thus, one approach to the study of the transition to adulthood is to analyze the processes involved during decision making in adolescence. In particular, the post-high school decision-making process provides a standardized, real-life activity in which most adolescents engage during their senior or final year of high school.

Our understanding of the transition to adulthood and adolescent decision making during this period is restricted in part by two important foci in the literature. First, the statistics on adolescent pathology color our notions of the "normalcy" of this period. "We have two extremes in our approach to adolescents, ranging from one of benign neglect to a constant crisis mentality..." (Lipsitz, 1979, p.2). The research on adolescent decision making often reflects this latter approach, which is useful for identifying and serving high-risk populations, but less useful for understanding how the majority of adolescents experience the journey into adulthood. These include studies of adolescent sexual decision making (Carlson, 1984; Falbo & Eisen, 1984; Henderson & Hasselbach, 1980; Juhasz & Sonnenshein-Schneider, 1979; Resnick, 1984) and those which focus on a particular subgroup, such as adolescent girls (Archer, 1985; Corder & Stephan, 1984), the gifted and talented (Marshall, 1981), disadvantaged or minority youth (Newlon, Nye, & Hill, 1985; Yang, 1981), substance users or abusers (Clawson, 1983; Johnson, 1980) or the handicapped adolescent (Bellamy, Wilcox, Rose, & McDonnell, 1985; Bingham, 1980; Belvins, 1985).

Second, research on adolescent decision making pertaining to the transition to adulthood usually accepts, at least implicitly, the widely held assumption that "for most males occupation also sets most aspects of life style for self, spouse, and offspring--characteristics of spouse, marriage and family pattern, income and what it buys, status in the community, satisfactions of personal drives and needs, recreational outlets, conversational style, dress, place of residences, associations with friends, relatives, and acquaintances and their continuity or discontinuity, political and social attitudes, goals, and ideals (Coleman, 1974, p. 102)." The tendency to generalize and simplify a series of very complex processes and behavior, and to predict a specified set of life events and experiences from one life factor (i.e., occupational choice), is flawed in two important ways. First, as noted in the quote, such conclusions have primarily been drawn from studies on men (Featherman, Hogan, & Sorensen, 1984; Winsborough, 1978, 1979). Second, the assumption is that the direction of influence in adult development is from adult role experience to adult experience of self or one's identity. Yet, the most accurate picture of adulthood is likely to be one which can account for the interaction of identity development with role development in a social context. Such interactions can better explain how very idiosyncratic patterns of decision making, lifestyle selection, and personal values can emerge from a common career choice.

The Role of Motivational Processes in Post-High School Decision Making:

Although career decision making is a significant process for youth involved in moving from adolescence to adulthood, it is inappropriate to claim that it is the only or most significant process to examine in relation to adult development. Although it is important from the perspective that even by age 14 students are required to make educational choices that help determine occupational outcomes, 14-to-18-year-olds generally have little information about the current world of work, even less about future changes, and only haphazard ways of acquiring it (Coleman, 1974).

An examination of post-high school decision making is a more representative and useful strategy for assessing adolescents' perceptions and behavior during the transition to adulthood than an assessment of career decision making, career choice, or high-risk decision making. The student leaving high school may construe their post-high school decisions in terms that belie a great deal more than occupational or career choice. In the present study, one young woman, Denise, provides a good example of the contrast between a focus on students' career choice or career decision making and their post-high school plans. Although she indicated that her career choice was to become a nurse, her immediate post-high school plan was to seek full-time employment. Her decision to postpone the logical path to nursing (i.e., college) was based upon her desire to complete specific tasks (e.g., "taking responsibility for (her)self, both financially and emotionally") prior to others.

Most studies of adolescent decision making view the decision outcome (i.e., college, marriage, military, employment) as the stated goal of the student. Others, however, have challenged the conventional wisdom that the decision outcome is the direct motivating force behind behavior (Alexander & Cook, 1979). Such challenges point out that self-reports of educational plans are not synonymous with motivation, (as in Denise's case), and as a consequence, the relationship between students' preferred decision outcomes and actual plans and activities appears weaker than would be the case if the motives and thought processes associated with the decision outcome were studied as separate variables.

Research Problem:

Four decision outcome categories are defined in this paper: 1) four-year college (20%), 2) junior college (36%), 3) non-college (36%), and 4) undecided (8%). In addition, 3 types of goal orientations (i.e., task, self, social) were identified and analyzed in relation to the 4 decision outcome categories and the decision-making processes involved during post-high school decision making.

The purpose of this study was threefold. In order to obtain and construct a detailed description of the students' perceptions of the transition to adulthood and the decision making strategies employed as they approached high school graduation (or leaving high school), the following questions were asked:

1) What patterns exist in students' personal goals, perceptions of personal agency, cognitive representations of adulthood, and cognitive competence during post-high school decision making, and how are these related to their post-high school decision outcomes?
2) How are the patterns in students' cognitive competence during post-high school decision making related to their grades, achievement levels, and skills they have acquired during their school experience (i.e., traditional cognitive measures)?

3) How are the patterns in students' cognitive competence during post-high school decision making related to their personal goals, perceptions of personal agency, competence criteria, perceptions of high school as initiating the transition to adulthood, and their perceptions of social support and influence?

Perspectives and Theoretical Framework:

This research on the transition to adulthood incorporates four important suggestions that have emerged from results of previous studies in which researchers attempted to study either adolescent decision making, the transition to adulthood, or both. First, this research is conducted from a process-orientation which can provide more useful information about adolescent and adult development than a structure or status orientation (Fregeau & Barker, 1986; Schvaneveldt & Adams, 1983). Second, the definitions of adulthood included in this study were not restricted to the concept of adult social roles (Coleman, 1974). Third, it was assumed that the transition to adulthood was more adequately studied by asking students to respond to the question "What are you going to do after high school?" than by limiting the research focus to career choice or career decision making (Schvandveldt & Adams, 1983). Fourth, in studying adolescent decision making, motivational processes were defined and examined separately from cognitive skills and strategies (Lokan & Biggs, 1982).

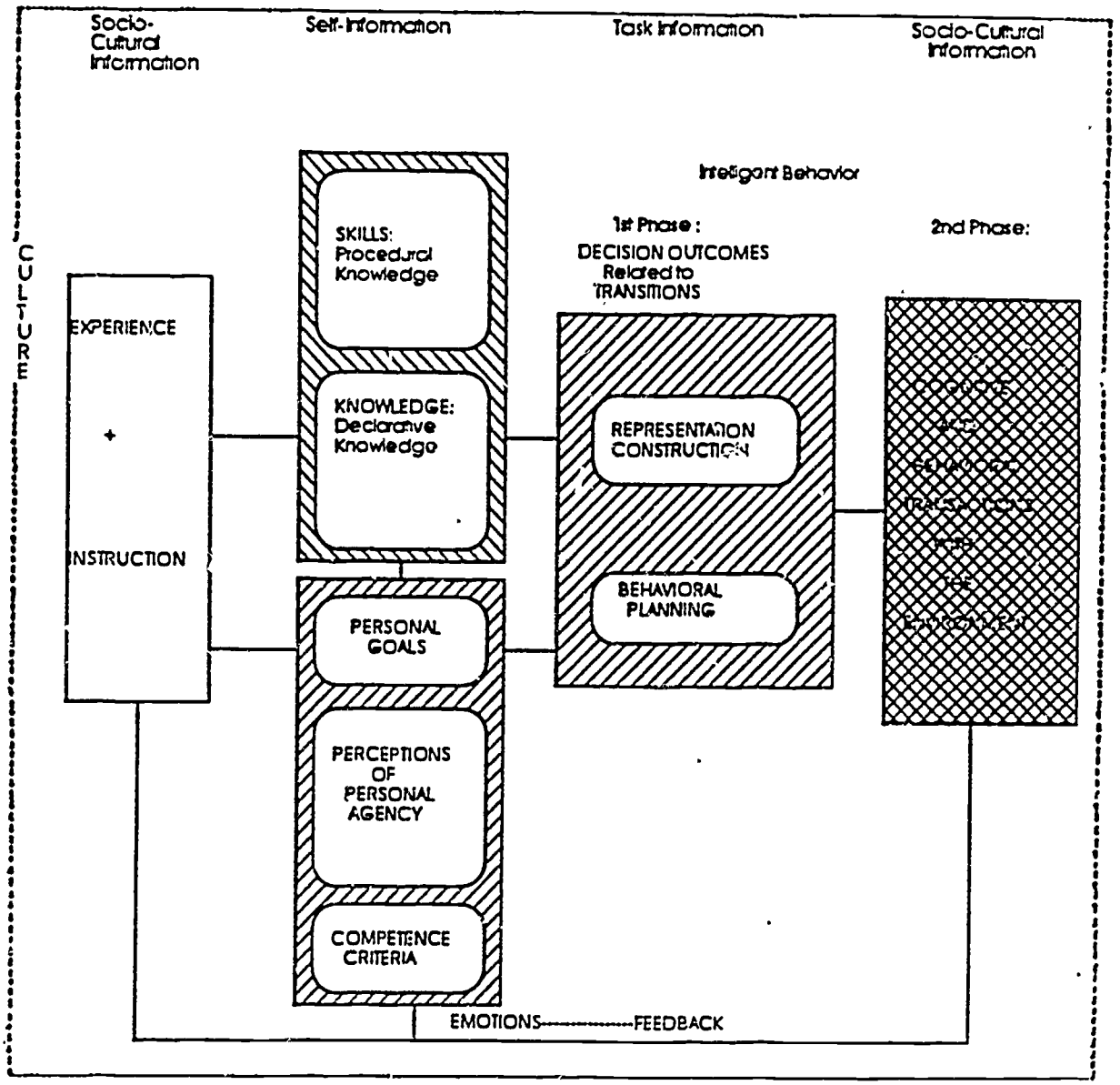
The study was conducted using a systems framework which identified three sources of information as promoting the critical antecedent processes and conditions necessary for the successful transition to adulthood. Data was collected on students' perceptions of 1) sociocultural information (e.g., appropriate or valued adult behavior and goals, 2) self-information (e.g., knowledge, skills, and personal goals), and 3) task information (e.g., environmental opportunities and requirements).

A systems approach to the study of behavior is not intended to suggest a linear, casual relationship between variables. Instead, the systems approach (and in particular the framework to be used in this study) attempts to describe how the various psychological processes interact to produce and sustain goal-directed behavior. The systems model in Figure 1 illustrates the complex nature of adolescent decision-making and problem-solving behavior. Figure 1 represents the larger picture within which adolescents decide what they will do as they leave high school; Figure 2 represents that portion of the larger picture which will be examined in this study. In addition to knowledge and skills being acquired via formalized teaching and learning, from the first model one can hypothesize that the cultural context in which these instructional behaviors are set and individuals' transactions with the environment also contribute to the kinds of thinking in which students might engage (Sternberg, 1984).

The systems framework used in the present study to analyze adolescent decision making integrates the internal and external sources of knowledge, skills, motivation, practical thinking processes, and environmental opportunities for action included in Sternberg's (1984), M. Ford's (in press), and Wentzel's (1987) theoretical frameworks and identifies these sources as critical antecedent processes and conditions for the successful transition to adulthood. The resulting conceptual frameworks (see Figures 1 and 2) were developed with two specific goals in mind:

Figure 1:

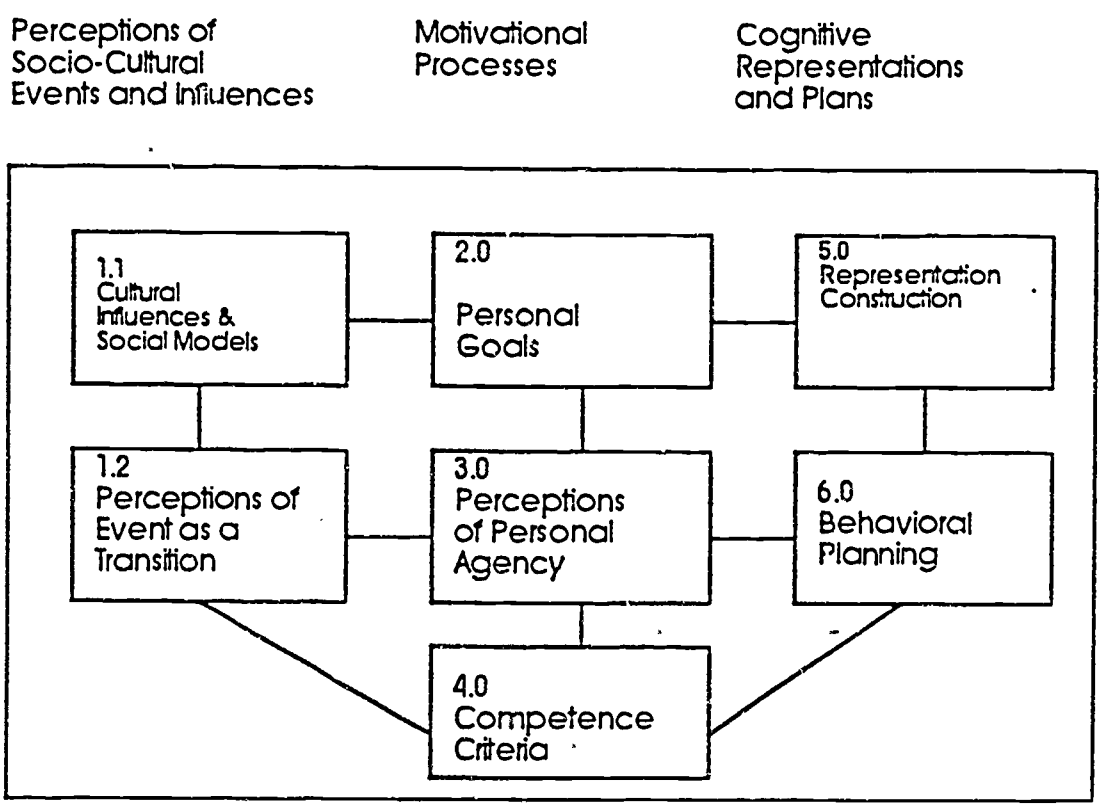
A Systems Framework for Analyzing Sources of Influence That Contribute to An Individual's Thinking During Transitions



Note: The relationships in this model are postulated to be bidirectional and interactional.

Figure 2:

A Systems Framework for Analyzing the Processes Involved in Adolescent Decision Making During the Transition to Adulthood



Note: The relationships in this model are postulated to be bidirectional and interactional.

1. To develop a conceptual framework of adolescent decision making that could take into account the individual student's motivational processes and cognitive skills, the cultural context in which he or she operated, and the student's experience with real-life problems other than those the student has encountered in the traditional educational system (see Figure 1).
2. To examine the heuristic utility of a portion of this framework to determine the extent to which a synthesis of Steinberg's triarchic theory of intelligence, M. Ford's Living Systems Framework, and Wentzel's systems model of motivation might more completely represent (compared to traditional models of adolescent decision making) the intelligent behavior of adolescents as they engage in decision making during the transition to adulthood (see Figure 2).

Method and Data Source:

Three methods of data collection were used to obtain information on the students' post-high school decision making:

1) A Post-High School Plans Survey was administered to 186 seniors in 8 government classes at a semi-rural high school in Northern California. Large pools of items were written or included from standardized and validated scales developed to assess self-and task information variables.
2) A subsample of 32 students was interviewed using an adapted version of Grotevant and Cooper's (1984) interview schedule designed to assess adolescent identity, exploitation, and commitment.
3) Document analysis procedures were used to obtain information on the students' level of achievement and skills, curricular tracking, and the number of student-initiated activities recorded on their transcripts.

Descriptive data were obtained for each of the four decision outcome categories. The data were also analyzed using one-way and multivariate analysis of variance with the decision outcome categories, gender, ethnicity, and socio-economic status serving as the independent variables. Correlational and regression analyses methods were applied to the data to determine how well scores on motivational process measures predicted scores on cognitive process and performance measures.

Definition of Constructs and Variables:

1.0 Perceptions of Socio-cultural Events and Influences. The variable represented in Figure 2 as 1.1) Cultural Influences and Social Models was assessed using the following items: "Other people have played an important role in my decision," "My parents have always wanted me to do this," and "Many of my friends have told me that they have decided to do the same thing." The variable labeled 1.2) Students' Perceptions of Graduation as a Transition to Adulthood was measured using the following items: "This decision is an important step for me in learning what it takes to be an adult," "The decision involves a great deal of responsibility," and "I will be on my own and have to answer for myself once I make this decision." The coefficient alpha indices of reliability for these two composites were calculated at .79 and .82 respectively.

2.0 Personal Goals. Goal Strength was assessed using the following items: "I have spent a lot of time thinking about what I want to do after I graduate," "This decision is what I most want to do at this time," "It is important that I follow through with this decision," "I'm very sure this is

the best decision I can make," "I don't know if this is what I really want, but I'm not sure what else I'd even want to consider right now," and "I believe I will follow through with my decision and stick to it."

Goal Types were divided into Task-Mastery, Self, and Social goals. Task-Mastery goals were assessed using four items. Two were oriented toward intellectual mastery and two toward career mastery: "to learn new things," "to understand new things," "to obtain a career," and "to be successful in my career." Self goals were assessed using seven items which reflected either an individualistic orientation ("to be the very best I can be," "to achieve happiness," "to get more education," to gain more independence and freedom," "to lead a healthy, enjoyable life)," or an ego orientation ("to be better than others," and "to be financially successful"). The Social goals measure was comprised of seven statements reflecting both social approval needs, "To earn the approval of others," "To do what others expect of me," and altruistic intentions, "To get involved with people," "To have a loving relationship," "To make new friends," "To keep old friends," and "To help people."

3.0 Perceptions of Control and Competence. Not analyzed in the study reported in this paper.

4.0 Competence Criteria. A shortened version of the list of 250 intelligent and unintelligent behaviors derived from Sternberg's (1981) study of people's conceptions of intelligence was used to assess students' competence criteria. Statements from seven of the factors reported in the original study were included on the Post-High School Plans Survey. Only those factors which represented the layperson's ratings of academic and everyday intelligence were considered.

The statements of behavior comprised three measures of competence criteria related to academic intelligence (i.e., Verbal Ability, Academic Problem Solving, and Everyday Social Competence) and four measures of competence criteria related to everyday intelligence (i.e., Practical Problem Solving ability, Social Competence, Character, and interest in Learning and Cultural).

The statements of behavior related to academic and everyday intelligence were given in item#'s 14 and 15 of the Post-High School Plans Survey (available upon request), and included 37 statements of the type: "Sees all aspects of the problem" (Practical Problem Solving); "Able to cope with everyday environment "(Social Competence); "Displays curiosity" (Character); "listens well" (Learning and Culture); "Displays a good vocabulary" (Verbal Ability); "Makes good decisions" (Academic Problem Solving); and "Deals effectively with people" (Everyday Social Competence).

5.0 Representation Construction. There were five measures analyzed representing this cognitive process. Three of the measures assessed the quality of the students' conceptions of adulthood tasks, whereas two measures assessed the level of elaboration characterizing the students' representations of adulthood.

In the study, eight categories emerged in the students' representations of adulthood: 1) New learning; 2) Interpersonal Skills; 3) Self-regulation; 4) Problem-Solving; 5) Career Role; 6) Citizen Role; 7) Family Role; and 8) Legal Opportunities. The last category was not present in the representations of college freshmen.

The first four categories were reduced into one measure referred to as Role Requirements for Making Decisions as Adults, and the 5th through 7th categories were reduced into a second measure referred to as Social Expectations. Decision Requirements included such phrases as "pay bills," "responsibility," "communicating with others," "going to college," and "using time wisely." Social Expectations included references to particular roles one must

assume as an adult--"marriage", "children", "career"--or the obligations and opportunities entailed in assuming the roles, such as "financial success." The coefficient alpha indices of reliability for Decision Requirements and Social Expectations were .66 and .73, respectively.

The last category was mutually exclusive of the other seven, and was maintained as a separate variable. The types of phrases students reported that were included in this category were "buying a home, "drinking," or "having a car."

6.0 Behavioral Planning. The majority of measures comprising this variable were drawn from the interview schedule. Specifically, Alternative Thinking, Means-End Thinking, Consequential Thinking, Cognitive Exploration, and Cognitive Evaluation were all measures that were created from the interview data. The last two were used in this study along with three other measures obtained from the survey.

Overall scores of Cognitive Exploration and Cognitive Evaluation were obtained by summing the individual global ratings each student received for each domain (occupational planning, friendship and independent living). These measures corresponded to the measures reported by Grotevant et al. (1982) in their analyses of the psychometric properties of the interview.

The remaining three measures were drawn from students' reports of the ages various tasks of adulthood were accomplished. The range of generative thinking involved in the Span of Adult Development measure was obtained by subtracting the lowest age reported in association with adult tasks from the highest age reported. The lowest age reflected exploratory (i.e., preparatory) thinking behavior with respect to the Onset of Adulthood. The oldest age reflected the ability to engage in cognitive exploration of the possibilities for adulthood across the life span (Completion of Adult Tasks and Development). Thus, these measures were an index of the students' short and long-term planning prospects.

Results:

The results indicated that there were significant differences in the strength and types of personal goals involved in students' post-high school decision making. (See Tables 1 and 2.)

Students with a social orientation were less likely to pursue a four-year college choice. Students with high levels of multiple goals were more likely to remain undecided as to their decision outcomes as they were leaving high school. (See Figure 3.)

Students' perspectives on themselves as young adults and their conceptions of adulthood were not affected by the types of decisions they were making as they left high school. That is, all students in all decision categories reported equivalent and relatively high scores for perceiving their post-high school decisions as signalling the transition to adulthood (M= 9.3, SD= 1.9 to M= 10.05, SD= 1.8, with the highest score possible = 12). (See Table 3.)

There were significant differences in the types of activities students perceived as being involved in becoming an adult. Students intending to go to college were more likely to represent adulthood as involving the acquisition of new learning ($F(3,185) = 3.04$, $p<.05$) and interpersonal skill development ($F(3,185) = 3.62$, $p<.01$). There were no differences in students' abilities to conceive of the social expectations involved in becoming an adult (e.g., career, family, and citizen roles); however, there were significant differences in their abilities to define the types of requirements involved in pursuing those roles. Regardless of decision outcome (i.e., even students going to college) students perceived high school graduation and the post-high

Table 1

Means and Percentages for Three Types of Goal Orientations Reflected in Students' Post-High School Decision Making

Goal Orientation	n[a]	Decision Outcome Categories: 4-Year College	Junior College	Non-College	Undecided	MS	F	Total
Task Orientation	185							
M		1.45	1.39	1.00	1.06	2.43	7.1**	1.24
SD		.55	.52	.62	.77			.61
% Low	18	2.6	1.5	18.8	25.0			9.7
% Moderate	105	50.0	58.2	62.5	43.8			56.8
% High	62	47.4	40.3	18.8	31.3			33.5
Self Orientation	184							
M		1.24	1.24	.95	1.00	1.56	3.2*	1.12
SD		.59	.55	.63	.73			.61
% Low	25	7.9	6.0	22.2	25.5			13.6
% Moderate	112	60.5	64.2	60.3	50.0			60.9
% High	47	31.6	29.9	17.5	25.5			25.5
Social Orientation	183							
M		1.18	1.31	.92	1.00	1.82	5.2**	1.12
SD		.61	.59	.52	.82			.61
% Low	24	10.5	6.1	17.5	31.3			13.1
% Moderate	112	60.5	56.1	73.0	37.5			61.2
% High	47	28.9	37.9	9.5	31.3			25.7

[a]Numbers of students out of 186 in each group who completed the items for each variable.

*$p<.05$

**$p<.01$

Table 2

Mean Z-Scores For the Personal Goal Features Depicted in Students' Post High School Decisions

Variable	n[a]	Decision Outcome Categories: 4-Year College	Junior College	Non-College	Undecided	MS	F	Total
Goal Strength[b]	182					7.24	8.1**	
M		.43	.006	-.02	-1.00			-2.42^{E-18}
SD		1.04	.87	.87	1.27			1.00
Time Invested	185					3.65	3.8**	
M		.38	.04	-.14	-.50			-2.06^{E-19}
SD		1.03	.90	.94	1.26			1.00
What I Want Most	184					4.77	5.1**	
M		.28	-.03	.06	-.86			-2.26^{E-18}
SD		.95	.95	.93	1.24			1.00
Goal Importance	183					2.87	3.0*	
M		.32	.01	-.06	-.53			1.88^{E-18}
SD		.88	.90	1.02	1.34			1.00
Goal Acceptance[b]	184					7.21	8.0**	
M		.53	.01	-.13	-.79			-3.20^{E-19}
SD		.96	.88	.92	1.21			1.00
Level of Commitment[b]	183					12.1	14.8**	
M		.73	-.08	-.09	-1.02			3.22^{E-19}
SD		.89	.89	.86	1.13			1.00

[a]Numbers of students out of 186 in each group who completed the items for each variable.

[b]These variables represent composites constructed from two or more other variables. *p<.05 ; **p<.01

Figure 3:

Percent of Students From Each Post-High School Decision Category Operating at High Levels for Task-Mastery, Self, and Social Goals

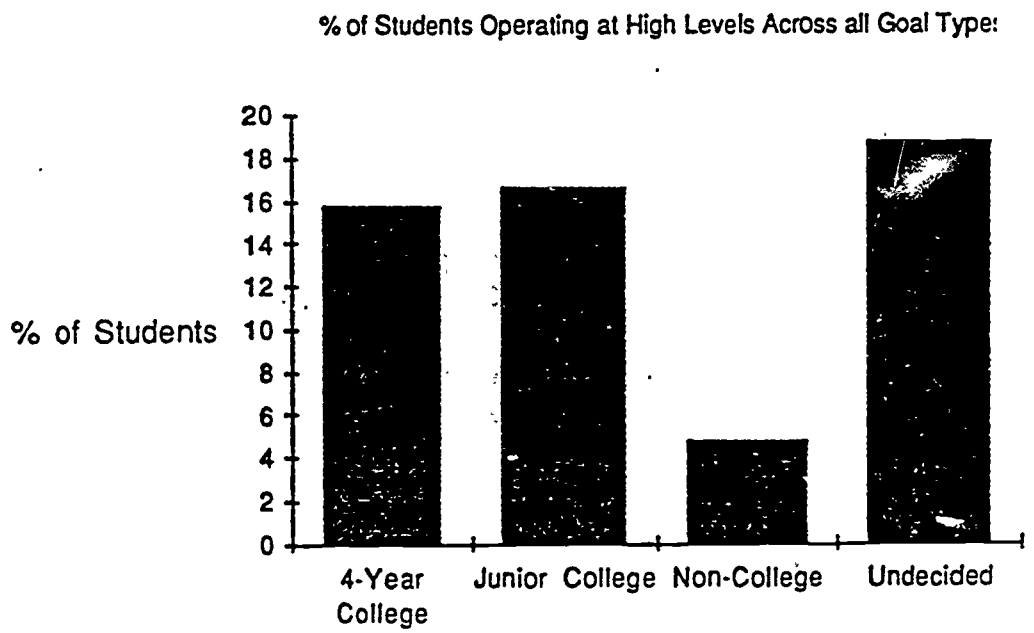


Table 3

Mean Scores of Students' Perceptions of the Importance of Their Post-High School Decisions in Initiating theTransition to Adulthood

Variable	n[a]	Decision Outcome Categories: 4-Year College	Junior College	Non-College	Undecided	MS	F	Total
Goal Strength	182					93.9	8.1**	
M		20.0	18.4	18.3	14.7			18.4
SD		3.8	3.2	3.2	4.7			3.7
Perceptions of the Event as a Transition	184					5.14	1.4	
M		10.05	9.3	9.5	9.4			9.5
SD		1.8	1.9	1.9	2.1			1.9
Social Influences	184					35.06	7.9**	
M		8.2	7.3	6.4	5.9			7.0
SD		2.3	2.2	7.8	2.4			2.2

[a]Numbers of students out of 186 in each group who completed the items for each variable.

*p<.05

**p<.01

school decision-making process as initiating the transition to adulthood. (See Tables 4 and 5).

The profile of competence criteria for adult success was:

1. Social Competence
2. Everyday social competence skills
3. Practical problem solving
4. Character
5. Academic problem solving
6. Learning and Culture
7. Verbal ability

The most significant differences associated with each of these factors were Gender, Ethnicity, and SES. There were significant differences associated with SES for Verbal Ability, Problem Solving, and Learning and Culture. The middle and low-middle-SES groups had the highest ratings on each of these factors, whereas the low-and-high-SES groups were more similar in their ratings, $F(4,185)=2.68$ to 2.72, $p<.05$. Ethnicity only affected students' ratings on the Learning and Culture factor. Native Americans had the highest ratings on this factor, along with Asian Pacific students, $F(4,185)=2.64$, $p<.05$. Whites, Blacks, and Hispanics were not significantly different from one another in their ratings of the importance of Learning and Cultural to adult competence. Gender differences were observed on the Character, Everyday Social Competence, and Social Competence factors (i.e., females rated each as more important to adult success than did males, $F(1,185)=8.75$, $p<.01$; $F(1,185)=4.72$, $p<.05$; and $F(1,185)=$, $p<.01$, respectively.

These same criteria were examined by comparing students' ratings across the three Goal Types. These results indicated that there were significant differences within the Goal Types on each of the intelligence factors. The only exceptions to this were for the Social and Self goal orientations on the Practical Problem Solving factor, the Task-Mastery and Social goal orientations on the Learning and Culture factor, and the Self-orientation on the Character factor. Each of the groups had different profiles for what factors were most important to adult success.

The profiles are listed below for each of the Goal Types:

Task-Mastery Orientation	Social Orientation	Self-Orientation
Social Competence	Everyday Social Competence	Everyday Social Competence
Practical Problem Solving	Character	Social Competence
Everyday Social Competence	Verbal Ability	Academic Problem Solving
Verbal Ability	Academic Problem Solving	Verbal Ability
Academic Problem Solving	Learning and Culture	Practical Problem Solving
Learning and Culture	Practical Problem Solving	Learning and Culture
Character	Social Competence	Character

One of the most significant differences in the profiles associated with Goal Types was the high importance given to Character by the Social orientation group, whereas this factor was assigned the lowest priority for both the Task-Mastery and Self orientation groups. Just the reverse pattern was revealed for Social Competence. The Task-Mastery orientation group rated Practical Problem Solving as the second most important factor, whereas this factor was relatively low on the list for the Social and Self orientation groups. Overall, the Self and Task-Mastery orientation groups were more alike.

Table 4

Mean Number of Tasks Listed by Students for Each Cognitive Theme Represented in the Transition to Adulthood

Variable	n[a]	Decision Outcome Categories: 4-Year College	Junior College	Non-College	Undecided	MS	F	Total
New Learning	185					1.37	3.04*	
M		.53	.61	.30	.25			.45
SD		.69	.85	.46	.45			.68
Interpersonal	185					3.67	3.6*	
M		.66	.76	.23	.25			.51
SD		1.17	1.31	.50	.45			1.03
Self-Regulation	185					3.74	1.7	
M		2.45	2.43	2.11	1.62			2.25
SD		1.29	1.44	1.68	1.20			1.49
Problem Solving	185					.11	.13	
M		.58	.49	.55	.44			.52
SD		.92	.77	1.13	.73			.93
Career Role	185					.10	.16	
M		.66	.73	.64	.69			.68
SD		.81	.71	.78	.87			.77
Citizen Role	185					.06	.58	
M		.05	.12	.06	.12			.08
SD		.23	.37	.30	.34			.32
Family Role	185					1.87	1.9	
M		.82	.90	.67	1.31			.84
SD		.98	.99	.98	1.14			1.00
Legal Opportunities	185					1.92	2.2	
M		.53	.40	.47	1.06			.51
SD		.86	.60	.98	1.77			.94

[a]Numbers of students out of 186 in each group who completed the items for each variable.

*$p<.05$; **$p<.01$

Table 5

Mean Estimates of Adult Development[b] by Post-High School Decision Outcome and Adult Task Categories

Variable	n[a]	Decision Outcome Categories: 4-Year College	Junior College	Non-College	Undecided	MS	F	Total
Decision Requirements	170					2.03	2.2*	
No Tasks Reported	4							
M		2.1	___	1.0	2.2			1.9
SD		1.3	___	0	0			.9
One of More Tasks Reported	166							
M		2.6	2.8	2.7	2.8			2.7
SD		1.0	1.1	.9	.8			1.0
Social Expectations	170					3.77	4.2**	
No Tasks Reported	52							
M		3.0	3.4	3.1	3.3			3.2
SD		1.0	1.0	.9	.3			1.0
One of More Tasks Reported	118							
M		2.3	2.5	2.6	2.7			2.5
SD		.9	1.0	.9	.8			1.0
Legal Opportunities	170					1.2	1.2	
No Tasks Reported	112							
M		2.6	3.0	2.6	2.9			2.8
SD		.8	1.1	.9	.6			1.0
One or More Tasks Reported	58							
M		2.4	2.5	2.8	2.7			2.6
SD		1.3	.9	1.1	1.0			1.1

[a]Numbers of students out of 186 in each group who completed the items for each variable.

[b]Value Ranges are: 1=Not yet beginning; 2=Just Beginning; 3=In the middle of task completion; 4=Toward the end of task completion; 5=Task completed

*p<.05
**p<.01

Students did not differ in their ability to employ cognitive skills during decision making. Nor was the strength and quality of the relationship between motivational processes and cognitive skills engaged during decision making reflected in the students' academic preparation (i.e., achievement scores and basic skills). (See Tables 6 and 7.)

However, the strength and quality of this relationship was reflected in the students' perceptions of adulthood, their perceptions of themselves as young adults, and the types of tasks they perceived as involved in becoming an adult.

Decision-Making Profiles. Profile analysis methods were used to explore the relationships among the various dependent variables in the interview data and to determine the replicability of the type of relationship between motivation and cognitive skill variables when this relationship was constrained by students' perceptions of the onset and span of adult development. Scatterplots were constructed for all of the dependent variables. All except one of these relationships were either linear or non-significant. The relationship between the students' perceptions of themselves as young adults and the number of tasks that involved specific requirements and responsibilities in adulthood was curvilinear.

In Figure 4 three decision-making profiles are represented. These profiles depict the levels of motivation and cognition that students either reported on or demonstrated during the interviews. The relationships are also influenced by a number of factors not immediately captured in the profiles or by the span of development. The onset and span of adult development (which is used to constrain the decision-making profiles represented in Figure 4) is related to the types of tasks students are likely to perceive as involved during that span.

If students perceived the tasks of adulthood as being functional or regulatory tasks (e.g., being able to make your won decisions) versus the conventional role-promoting tasks (e.g., achieving a career or becoming a parent) then the age of the onset of adulthood--or the transition into young adulthood--is lower, and the span of adulthood is likely to reflect that the majority of tasks can be accomplished within a shorter span of years (i.e., by 18 years of age). The "Early Starters" profile depicts this pattern, yet they were the group most likely to have the greatest variance in their decision-making profile. This group represents 21% (i.e., n=6 of 28) of the interviewees for which these data were available. In addition, the mean for the total span of adult years was longer for this group than any of the other two profiles ($\bar{M}$=15 years). The early start on adult tasks does not necessarily promote or guarantee consistently high levels of motivation and cognitive skill application during post-high school decision making. However, the highest levels are represented in this profile.

When students perceived adulthood primarily in terms of assuming new roles, they were more likely to perceive adulthood as starting later (i.e., on or around high school graduation) and to depict adult development across a wider range of years following graduation ($\bar{M}$=7.5 years). The "Late Bloomers" profile has a decision-making profile that involves the lowest levels of motivation and cognition, although the variance in each is different. Students who were "Late Bloomers" were likely to have low to moderate levels of cognitive evaluation skills applied during post-high school decision making, yet were likely to display a wide range of motivational levels, the highest of which is not associated with the highest levels of cognitive evaluation skills. 32% (n=9) of the students fell into this group.

Table 6

Mean Levels of Cognitive Exploration and Cognitive Evaluation Within And Across Adult Domains

Variable	n[a]	Decision Outcome Categories: 4-Year College	Junior College	Non-College	Undecided	MS	F	Total
Occupatonal Exploration	32					.86	1.4	
M		2.8	2.4	3.1	3.0			2.8
SD		.87	.51	.90	1.4			.80
Friendship Exploration	14					.05	.08	
M		3.0	2.9	2.8	—			2.9
SD		1.0	.90	.50	—			.77
Independent Living Exploration	18					.58	.45	
M		2.6	2.4	2.7	3.5			2.7
SD		.92	1.5	1.1	.71			1.1
Cognitive Exploration[b]	32					1.67	.76	
M		5.5	5.1	5.9	6.5			5.5
SD		1.4	1.5	1.3	2.1			1.5
Occupational Evaluation	32					.54	.83	
M		3.3	2.8	3.0	2.0			3.0
SD		.79	.72	.82	0			.78
Friendship Evaluation	14					.47	.45	
M		3.7	3.0	3.2	—			3.2
SD		.58	1.2	.96	—			.98
Independent Living Evaluation	18					.59	.45	
M		2.4	2.2	2.3	3.0			2.4
SD		1.1	1.3	.58	0			.96
Cognitive Evaluation[b]	32					.87	.49	
M		6.0	5.5	5.9	5.0			5.7
SD		1.5	1.4	1.1	0			1.3

[a]Numbers of students out of 32 in each group who completed the items for each variable. [b]Across domain composites

Table 7

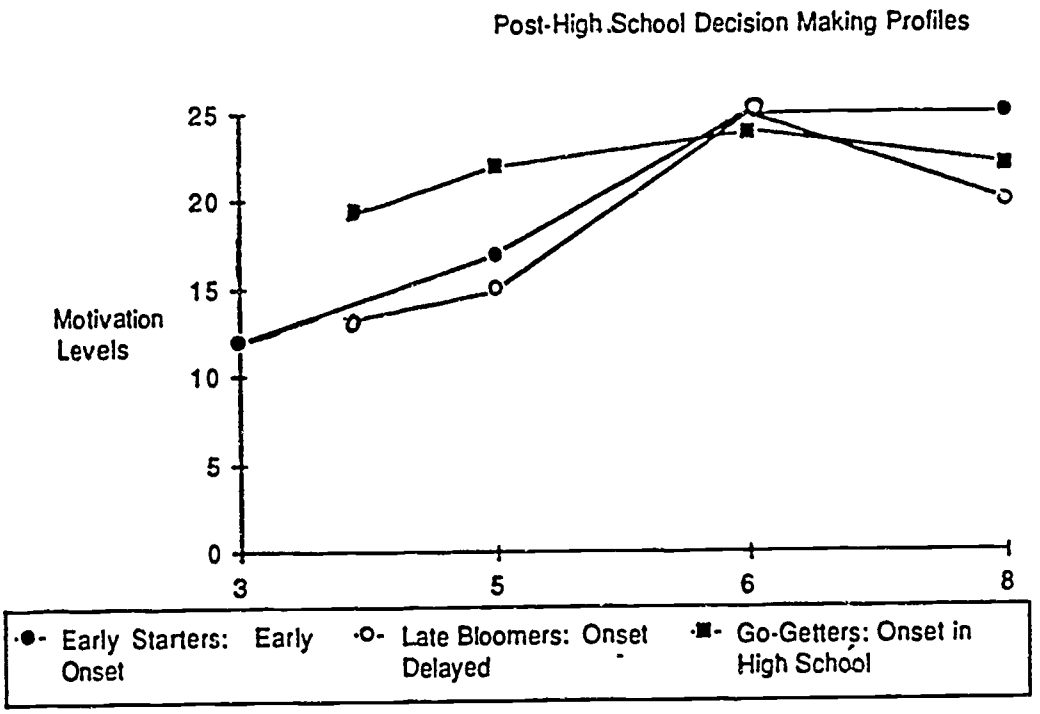
Correlations Between the Traditional Cognitive Outcome Variables and Motivational Process Variables Assessed During Post-High School Decision Making

	Traditional Cognitive Outcome Variables				
Motivational Process Variables	Achievement	GPA	CTBS	Skills	Student-Initiated Activities
Perception of Event as Transition	-.15	-.14	-.20	.10	.02
Social Influences	.05	.05	.03	-.07	.13
Goal Strength	.29	.25	.18	.19	.27
Motivational Level	.31	.24	.32	.21	.21
Multiple Goals	-.24	-.19	-.40	-.25	-.01
Task Orientation	-.08	-.07	-.17	-.05	.09
Self Orientation	-.39	-.36	-.39	-.19	-.06
Social Orientation	-.12	-.06	-.35	-.36	-.07
Time of Goal Awareness	.28	.28	.17	.20	.26
Perceptions of Competence	-.0001	-.10	.15	-.07	-.22
Immediate Time Pressure	-.01	-.03	.07	-.10	-.18
Long Term Personal Direction	.01	-.07	.16	.24	.01
Adult Development	.60	.65	.28	-.21	.55

*p<.05

Figure 4

Profiles of Students' Motivation Levels and Cognitive Evaluation Skills During Post-High School Decision Making as a Function of Their Perception of the Onset of Adulthood



The "Early Starters" were nearly always students who had indicated they were going on to four-year college, whereas the "Late Bloomers" included a mix of students going to both junior and four-year college.

The "Go Getters" represent the third and final decision-making profile group (39% of the students or n=11). They perceived adulthood as starting during the high school years and spanning well into the twenties (M=10 years). The motivation-cognition pattern exemplified in this group's profile started at a higher level of motivation, and higher levels of motivation were more likely to be associated with higher levels of cognitive evaluation skills during post-high school decision making. This group was comprised of students from all four of the post-high school decision categories.

Two interviewees did not fit any of the three profiles, either in their projection of adult development or their motivation/cognition profile. However, since there were only two such students, their profile was considered to be more idiosyncractic than representative of a particular approach to the transition to adulthood. Both students had extremely high motivation/cognition profiles. Both students saw adulthood as spanning a very short number of years (M=4.5 years). One of the students had decided to go to junior college; the other was not going on to college. The junior college student saw his decision as a means of gaining self-understanding and new learning, whereas the non-college student viewed his decision as a means to a career. For the first student, all ten of the tasks listed reflected the kinds of requirements and responsibilities that adults must engage in as they assume new roles. He also perceived that he had nearly completed his adult development. The second young man listed twice as many social roles tasks as functional tasks, and perceived himself as just beginning his adult development.

When the scores from the total interview sample were analyzed, these significant relationships were not maintained. In addition, none of the Competence Criteria measures were significantly correlated with any of the cognitive skill measures. (See Table 8.)

There were, however, significant relationships among the students' Cognitive Evaluation (i.e., behavioral planning) scores and scores on four of the motivation variables. The same four motivational variables that were significantly correlated with one another were also significantly and positively correlated with students' scores on the global Cognitive Evaluation measure. (See Table 9.)

Students who had stronger goals, higher motivation levels, and higher perceptions of competence with regard to their future, and who were more likely to organize and plan their future, were also more likely to evaluate the outcomes of their post-high school decisions in terms of the level of commitment (behavioral and intentional) necessary to carry it through (r=.51, p<.01; r=.60, p<.01; r=.53, p<.01; and r=.52, p<.01 respectively). In addition, students who perceived their post-high school decisions and high school graduation as initiating the transition to adulthood were more likely to generate alternatives in their decision making (r=.46, p<.01 for a composite which included the occupational, friendship, and independent living domains).

More specific relationships between the motivation and cognitive skill measures were evident for scores within the occupational domain. In Table 10, three of the motivation variables were significantly and positively related to three of the domain-specific cognitive skill measures--consequential thinking, number of plans, and number of steps taken in relation to post-high school decisions and occupational choices. Scores on the Self Goal Orientation measure were positively correlated with scores on the Consequential Thinking measure (r=.49, p<.01). In addition, the earlier students reported being

Table 8

Correlations Between the Cognitive Process Variables and Competence Criteria

Variables: Interview Sample

	Cognitive Process Variables												
	Role Requirements	Social Expectations	Legal Opportunities	Number of Tasks	# of Alternatives	Span of Adult Development	Onset	Completion	Occupational Cognitive Elaboration	Cognitive Exploration	Cognitive Evaluation	Alternative Thinking	Means-End Thinking	Consequential Thinking
Verbal Ability	-.08	.04	-.15	-.01	-.06	.18	.11	.26	-.30	-.30	-.31	-.21	-.08	.03
Academic Problem Solving	-.02	.16	.05	.18	-.06	.27	-.03	.23	-.08	-.03	.05	.07	.07	.19
Everyday Social Competence	-.02	.14	-.003	.27	-.23	.22	.16	.35	.07	.14	.08	.11	.29	.26
Social Competence	.19	.19	-.09	.27	-.32	.33	-.21	.15	-.19	.00	-.03	.16	.24	.14
Practical Problem Solving	.16	.12	.12	.32	-.16	.28	-.09	.18	.13	-.05	.22	.06	.16	.28
Character	.14	.01	-.11	.20	-.23	.28	-.12	.16	-.17	-.11	-.03	-.07	.06	.16
Learning & Culture	.10	.06	.04	.16	.02	.22	-.09	.14	-.13	-.16	-.19	-.06	.03	06

*p <.01; **p <.001

Table 9

Correlations Between the Cognitive Process Variables and Motivational Variables:

Interview Sample

	Cognitive Process Variables													
	Role Requirements	Social Expectations	Legal Opportunities	Number of Tasks	# of Alternatives	Span of Adult Development	/Onset/	Completion	Occupational Cognitive Elaboration	Cognitive Exploration	Cognitive Evaluation	Alternative Thinking	Means-End Thinking	Consequential Thinking
Perceptions of Transition	.00	.10	-.07	.15	-.20	.11	-.07	.05	-.03	.36	.34	.46*	.12	.19
Social Influences	-.27	.21	-.15	-.12	-.43	.17	.32	.43	-.14	0.5	.03	.17	-.14	.18
Goal Strength	.11	-.16	-.09	-.01	.08	.11	-.21	-.06	.16	.34	.51*	.31	.28	-.02
Motivational Level	.28	-.21	-.16	-.15	.14	-.04	-.20	-.20	.30	.40	.60**	.27	.32	.14
Multiple Goals	-.26	-.01	-.06	-.16	-.24	.12	.12	.22	-.18	16	.20	.14	.22	.06
Task-Mastery Goals	-.06	-.15	-.14	-.07	-.33	.05	08	.13	-.20	00	.18	.02	.23	10
Self Goals	-.21	.09	.03	-.05	-.22	.22	.10	.31	-.11	.27	.23	.21	.21	16
Social Goals	-.35	.05	-.02	-.24	-.08	01	.12	20	-.14	.13	.10	.08	.11	-.07
Time of Goal Awareness	.12	-.19	-.37	-.06	-.05	-.14	-.[illegible]	-.29	.16	.26	.24	.29	.05	-.03
Predictions for Success With:														
Adult Tasks	.31	-.07	-.10	.30	.14	-.07	-.17	-.21	.02	.17	.11	.11	.22	16
Post-High School Decision	.34	-.12	-.02	.16	-.04	.11	-.15	-.02	-.12	.18	.24	.29	.24	-.04
Occupational Choice	.02	.18	.24	.13	.32	-.12	-.06	-.18	.27	-.12	.08	.02	.11	.04
Perceptions of Competence	.07	-.07	.06	.12	.01	.20	-.25	-.03	.26	.32	.53*	.27	.26	.24
Long Term Personal Direction	.20	-.19	-.13	.09	-.12	.02	-.23	-.18	.27	.28	.52*	.25	.20	.11
Immediate Time Pressure	-.10	-.04	.12	-.02	-.01	-.02	-.07	-.08	.37	.18	.46	-.03	-.001	18
Adult Development	.17	-.33	.42	___	.54	.81	-.53	-.07	.21	.30	07	03	.47	08

*p < 01; **p <.001

Table 10

Correlations Between the Cognitive Process Variables in the Occupational Domain and Motivational Variables: Interview Sample

	Cognitive Process Variables				
	Alternative	Means-End	Consequential	# of Plans	# of Steps
Perceptions of Transition	.35	.08	.27	.33	.02
Social Influences	.03	-.16	.19	.07	-.26
Goal Strength	.24	.07	-.04	.29	.27
Motivational Level	.21	.13	-.01	.35	.28
Multiple Goals	.21	.14	.32	.37	.13
Task-Mastery Goals	.14	.03	.13	.22	.12
Self Goals	.31	.19	.49*	.32	.11
Social Goals	.03	.13	.18	.35	.09
Time of Goal Awareness	.05	-.05	-.17	.61**	.20
Predictions for Success With:					
Adult Tasks	.01	.18	.06	.12	.23
Post-High School Decision	.18	.27	.10	.16	.04
Occupational Choice	-.14	.16	.08	.01	-.05
Perceptions of Competence	.04	.26	.10	.05	.38
Long Term Personal Direction	.01	.26	.04	.15	.30
Immediate Time Pressure	-.12	-.05	-.07	.02	.47
Adult Development	.00	.34	.30	.33	.06

*p <.01; **p <.001

aware that their post-high school decision was their most viable alternative, the more likely they were to report having made a greater number of plans for themselves in relation to their post-high school decision (r=.61, p<.01). Students' with higher scores on the Immediate Time Pressure scale were also more likely to report that they had actually taken steps to follow through with their post-high school decision plans (r=.47, p<.01).

Conclusions and Implications

The transition to adulthood is best represented as a gradual process, involving very specific responsibilities and requirements that accompany the more traditional role changes typically associated with this time period (i.e., student to worker, adolescent to spouse and parent). Post-high school decision making reflected career choice issues as well as other requirements involved in the process of developing from adolescents to adults. High school graduation, or more specifically, the post-high school decision making process, is the vehicle through which students negotiate their new roles as young adults (see Figure 5).

Thinking is more likely to be generated during the post-high school decision-making process if students perceive this time as initiating the transition to adulthood. Regardless of the types of decisions students are considering, they are equally likely to generate alternatives, and equally likely to explore those alternatives in depth. However, if students are not sufficiently motivated, that is, if they do not perceive their post-high school decisions as being particularly important to achieving their personal goals, and if they do not perceive themselves as capable of carrying out those decisions in the near future, then they will be less likely to evaluate the consequences and difficulties that might ensue for them as they pursue their goals, and will be less likely to assess whether they will remain committed to their decisions should such barriers arise. Thus, limited higher order thinking (i.e., Cognitive Evaluation) is related to lower Motivational Levels and Perceptions of Competence during students' post-high school decision making.

There were a number of significantly related cognitive and motivation process variables that dropped out of the analyses when the interview sample was used instead of the survey sample. The reduction in sample size, and the possible reduction of variance in the students' scores due to self-selection procedures, might have accounted for this reduction in the number of significant motivation/cognition relationships during post-high school decision making.

The results on the 3 decision-making profiles suggest that there are two significant ways in which the post-high school decision making process is related to students' perceptions of this time as initiating the transition to adulthood. First, if students do perceive that upon leaving high school they will be entering new roles and requirements as young adults, they are more likely to initiate the thinking and goal-setting processes necessary for them to establish a path they wish to follow into adulthood. Second, students who have a richer representation of adulthood (i.e., higher Number of Tasks and higher ratio of Decision Requirements tasks to Social Roles tasks), and who perceive themselves as involved in adult development, will be more likely to have stronger goals and higher levels of thinking operating during the transition to adulthood. These relationships appear to be profiled differently for different groups of students, depending on the length of time students ascribe

Figure 5:

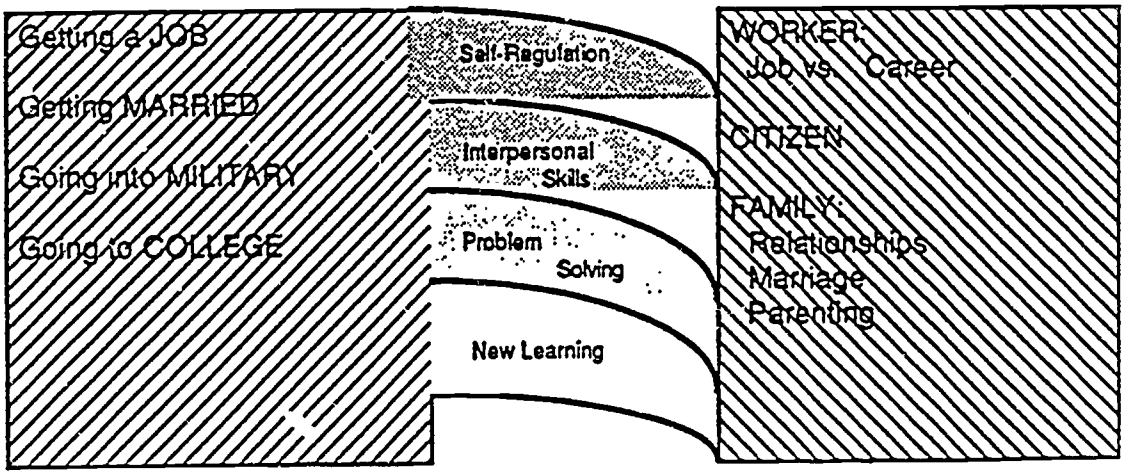
Psychological Perspectives on theTransition to Adulthood

Activated Decision
Upon Leaving
High School

The Adult World
Adult Roles

Individual Perceptions
of the Tasks Involved
in Becoming an Adult:

Bridges to Adult
Roles and Expectations



to adult development. The most promising decision-making profile (i.e., "Go Getters": high motivation/high cognition) is associated with students' perceptions of adulthood as being initiated during the high school years but continuing on into the mid-twenties, wherein most adult tasks of importance should be completed. Interestingly, this particular profile had an equivalent number of students from each of the decision categories, and even one of the undecided students was reflected in this profile.

The results suggest that adult development is not initiated in singular or even multiple role shifts, but rather occur gradually as students begin to approach the end of compulsory schooling and as they begin to identify and assume the kinds of responsibilities that characterize everyday relationships and problems. The post-high school decision-making process serves as the vehicle for ushering students into the adult world, even as college students. How these initial perceptions and paths into adulthood are related to adult competence in later years remains to be studied.

The results of this study suggest that students who have a sense of the "big picture" of adulthood are better able to explore and evaluate alternatives they are considering as they leave high school, and better able to select a choice which reflects their commitment to a particular identity (i.e., specific personal goals they embrace). By persisting with the assumption that adulthood is delayed until students shift roles to worker, spouse, and parent, we ignore important changes in perceptions and responsibilities that occur for young adults who operate in a college environment in conjunction with or instead of a work environment. Although we tend to emphasize career development and career decision making in conceptualizing the transition to adulthood, we need to explicate further the links between career choice, interpersonal skills and commitments, and intrapersonal skills (i.e., self-regulation, problem-solving, goal-setting, learning attitudes, and self-understanding).

Future investigations should give particular attention to adult outcomes for those students who remain undecided at the time they leave high school to determine whether specific decisions and paths restrict or enchance students' chances of achieving adult competence.

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